

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

5 (i) APPLICANT: Helgeson, John P.  
Austin, Sandra  
Naess, Sara K.

10 (ii) TITLE OF THE INVENTION: GERMPLASM AND MOLECULAR  
MARKERS FOR DISEASE RESISTANCE IN POTATO

(iii) NUMBER OF SEQUENCES: 5

(iv) CORRESPONDENCE ADDRESS:

15 (A) ADDRESSEE: Dann, Dorfman, Herrell & Skillman  
(B) STREET: 1601 Market Street, Suite 720  
(C) CITY: Philadelphia  
(D) STATE: PA  
(E) COUNTRY: USA  
20 (F) ZIP: 19103

(v) COMPUTER READABLE FORM:

25 (A) MEDIUM TYPE: Diskette  
(B) COMPUTER: IBM Compatible  
(C) OPERATING SYSTEM: DOS  
(D) SOFTWARE: FastSEQ Version 1.5

(vi) CURRENT APPLICATION DATA:

30 (A) APPLICATION NUMBER: Not yet assigned  
(B) FILING DATE: 27-JUL-1998

(vii) PRIOR APPLICATION DATA:

35 (A) APPLICATION NUMBER: US 60/054,267  
(B) FILING DATE: 30-JUL-1997

(viii) ATTORNEY/AGENT INFORMATION:

40 (A) NAME: Janet E. Reed  
(B) REGISTRATION NUMBER: 36,252  
(C) REFERENCE/DOCKET NUMBER: P98003WO

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 215-563-4100  
(B) TELEFAX: 215-563-4044

45 (2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

50 (A) LENGTH: 586 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
55 (iv) ANTISENSE: NO  
(v) FRAGMENT TYPE:  
(vi) ORIGINAL SOURCE: Solanum bulbocastanum

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

	GGCACTGAGG	GGTAGTAAGC	CTCCTGCATG	TACTAAGTAT	GGTAGATCCA	CTCAGGGTTG	60
	TGCCATGATG	GCTTAACTGG	TTGTTTCAAG	TATGGCCAGA	ACGGTTATTT	TATGAGAGAG	120
5	TTTCCAAAGA	ACATGCAGGG	TAATGGTAAT	GGGGATAATA	GAACCCAGTC	TTCTTCAGTG	180
	ACTCCACCAG	ACAGAGCTGC	ATCTAGAGGA	GCTACTTCGA	GGCAGGCGGA	GGATCGAACC	240
	TCTTTATGCT	ATCACTAGTC	GCCAAGAGAA	AGAGGATTCG	CCAGATGTTG	TCACTGGTAT	300
	GATCCAAGTC	TTTAACTTTG	ATTTTATACT	TTTCTAGATC	CAGGAGCGAG	TTTATCCTTT	360
	GTAACCTCCT	ATGTTGCGGT	TAATTTTGAT	GTTCTTCCTA	AGAACTTAT	TGAGCCCTTC	420
10	AGTGTTTCTA	CACTTGTTGG	TCTATTATAG	TAGAGAGAGT	CTGTTATGAT	TGTACCGTTT	480
	TCGTCAATCA	CAAGAGCACC	ATGGTTGATT	TAGTTGAGTT	AGACATGGTA	GAATTTGATG	540
	TTATTCTTGG	TATGGACTGA	CTTCATTCTT	GTTATGCCTC	AGTGCC		586

## (2) INFORMATION FOR SEQ ID NO:2:

15

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 587 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

20

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTISENSE: NO

25

(v) FRAGMENT TYPE:

(vi) ORIGINAL SOURCE: Solanum bulbocastanum

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

30	GTGGTCCGCA	TATAACTCAA	GAAGTTGTAA	TGCATGTATC	GGATATATGT	ATACATGTTG	60
	TCTTTTGCAA	AGTTTACTTT	TTTATTANTT	AATCTTGTTT	GTGCTCTGGAG	GTGGTGGTGG	120
	GGTGGGATAG	TGGTGAAGCT	AGAAATTTAG	TTAAGTGTGT	TCAAGATTTA	AATATACATA	180
	TGAAAAATAA	TTTTTGATCT	ATATATATAG	TTATAATTTT	NTGATGAAGG	TAGTTCAACT	240
	GACCACCCGT	NACTACATGT	GGCTACCGTA	CTGGGTGGGG	TGGAAGGTCTN	TGGTGTTTAC	300
35	AGTGATGTGG	GGGCCTCTGA	AATGCTTTTG	TGGGCAATGT	GGGAATTACT	GTTTATCTTT	360
	TCTTTATTGA	AGTCATTGAG	TGTTTGAGTT	ATTTAACTAT	GAAAGGTAGC	TAGTGGGTAA	420
	TGTTATTGAT	GACTTTGTGT	GAAGAACAAA	ATGTCAATCA	TTCAAGACGT	TCAATGGGGG	480
	CACGTGCTGG	AGTCCCATT	GGATTATTGG	GTTTAGGGGT	TGCCTAGGTG	GTGGTGGTGG	540
40	TGGTTGGTAA	TGGATAATAA	TGTTGGTGAA	ATATGGGTGC	GGAGGAG		587

## (2) INFORMATION FOR SEQ ID NO:3:

## (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 596 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(iii) HYPOTHETICAL: NO

(iv) ANTISENSE: NO

(v) FRAGMENT TYPE:

(vi) ORIGINAL SOURCE: tomato

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

55	GTTGGGCAGA	AGAGCTAGGA	AGAGTAAGCA	TGTCAAGTGA	TAGTTGCAGC	CACTGGTGT	60
	ATAGTTGTAG	ACAACCCGTG	AATCTCAGGA	GACAAAATGA	TGTTTGCCCC	AATTGCGGTG	120
	GTGGATTTGT	TCAAGAGCTT	GAAGACATAA	CGAGTAGTAG	TGTAGATAAT	CAGACCCAGA	180
60	GGCCGAGATT	CATGGAATCC	GTCTCAAAC	TTTTAAGACG	ACAAATCTCA	GCTACAAGTA	240
	ATACTTCTGA	GAGAGGGAGA	TCTGATGGGG	GTGCTGAACG	AGGAAATTTG	TGGAATCCGT	300

	TGCTGATTTT	CAGTGGTGAT	ACGCCTGTTC	ATATGCCTGG	GGATGGTGGA	GTTTTGGAGT	360
	TTCTTAATGA	GGCACCTTGG	ATTCCGAGCA	AGAAAATGGT	GGTGATTATT	TTGTTGGTCC	420
	AGGAGTGGAG	GAATTTTTTG	AAGAAATTGT	AAATAGAAAT	CAGCGTGGTG	CTCCTCCTCC	480
5	TGTCTCGAGA	TGTTCAATTG	ATTCCCTACC	AACAGTCAAG	ATATCAAAAA	AGGATGTTAG	540
	ATCGGATTCG	CACTGCCCTG	TTTGTAAGGA	GAAATTTGCT	CTGGGGACTA	AGGCAA	596

## (2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
- 10 (A) LENGTH: 589 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
(D) TOPOLOGY: linear
- 15 (ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iv) ANTISENSE: NO  
(v) FRAGMENT TYPE:  
(vi) ORIGINAL SOURCE: *Solanum tuberosum*
- 20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

	GTTGGGCAGA	AGAGCTAGGA	AGAGTAAGCA	TGTCAAGTGA	CAGTTGCAGC	CACTGGTGTT	60
	ATAGTTGTAG	ACAACCCGTG	AATCTCAGGA	GACAAAATGA	TGTTTGCCCC	AATTGCAGTG	120
25	GTGGATTTGT	TCAAGAGCTT	GAAGACATAA	CGAGTAGTAG	TGTAGATAAT	CAGAGCCAGA	180
	GGCCGAGATT	TATGCAATCC	GTCTCAAAC	TTTAAAGACG	ACAAATCGCT	ACAAGTAATA	240
	CTTCTGAGAG	AGGGAGATCT	GATGGGGGTG	CTGAACGAGG	AAATTTATGG	AATCCATTGC	300
	TGATTTTCAG	TGGTGATACG	CCTGTTCAAG	ATGCCTGGGG	ATGGTGGAGT	TTTGGAGTTT	360
	CTTAATGAGG	CTCTTGCTT	CCGACAAGAA	AATGGTGGTG	ATTATTTTGT	TGGTCCAGGA	420
30	GTGGAGGAAT	TTTTTGAAGA	AATTGTAAAT	AGAAATCAGC	GTGGTGCTCC	TCCTGCCTCA	480
	AGATGTTCAA	TTGATTCCCT	ACCAACAGTC	AAGATATCGA	AAAAAGATGT	TAGATCGGAT	540
	TCTCACTGCC	CTGTTTGTA	AGAGAAATTT	GCTCTGGGGA	CTAAGGCCAA		589

## (2) INFORMATION FOR SEQ ID NO:5:

- 35 (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 592 base pairs  
(B) TYPE: nucleic acid  
(C) STRANDEDNESS: double  
40 (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA  
(iii) HYPOTHETICAL: NO  
(iv) ANTISENSE: NO  
45 (v) FRAGMENT TYPE:  
(vi) ORIGINAL SOURCE: *Solanum bulbocastanum*

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

50	GTTGGGCAGA	AGAGCTAGGA	AGAGTAAGCA	TGTCAAGTGA	CAGTTGCAGC	CACTGGTGTT	60
	ATAGTTGTAG	ACAACCCGTG	AATCTCAGCA	GACAAAATGA	TGTTTGCCCC	AATTGCGGTG	120
	GTGGATTTGT	TCAAGAGCTT	GAAGACATAA	CGAGTAGTAG	TGTAGATAAT	CAGAGCCAGA	180
	GGCCGAGATT	CATGGAATCC	GTCTCAAAC	TTTAAAGACG	ACAAATCCCA	ACTACAAGTA	240
	ATACTTCTTG	AGAGAGGGAG	ATCTGATGGG	GGTGCTGAAC	GAGGAAATTT	GTGGAATCCG	300
55	TTGCTGATTT	TCAGTGGTGA	TACACCTGTT	CGGATGCCTG	GGGATGGTGG	AGTTTTGGAG	360
	TTTCTTAATG	AGGCTCTTGG	CTTTCGACAA	GAAAATGGTG	GTGANTATTT	TGTTGGCCCA	420
	GGAGTGGAGG	AGTTTTTTGA	AGAAATTGTA	AATAAAAATC	AGCGTGGTGC	TCCTCCTGTC	480
	TCAAGATGCT	CAATTGATTC	CCTACCAACA	GTCAAGATAT	CGAAAAAGGA	TGTTAGATCG	540
	GATTCTCACT	GCCCTGTTTG	TAAAGAGAAA	TTTGCTCTGG	GGACTAAGGC	AA	592